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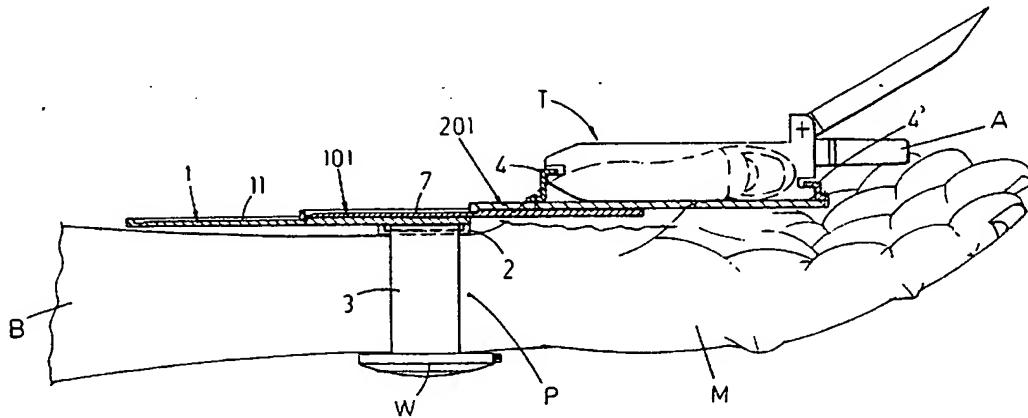
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(54) Title: DEVICE FOR THE QUICK AND EASY USE OF A SMALL SIZE CELLULAR TELEPHONE



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(57) Abstract: The small size cellular telephone (T) is fixed on a telescopic slide (201, 101) sliding on a guide (1) which can be longitudinally secured on the user's arm (B), at the wrist (P). When the cellular telephone calls and has the vibration signaller warning system activated, the vibrations are easily transmitted to the slides and guide system and from this last to the user's wrist who can this way instantaneously notice the call state, even if he is in a noisy place. By catching the cellular telephone with the free hand, the user can extend the guides and quickly bring the cellular telephone itself to the palm of the hand to use it. When the conversation is over, the cellular telephone can be as well quickly taken back to the backward rest position on the wrist. Suitable release means are provided to keep the slides in the backward rest position and if required also in the extended use position of the cellular telephone.

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TITLE: "Device for the quick and easy use of a small size cellular telephone" JC12 ac'd PCT/PTC 13 APR 2005

DESCRIPTION

In order to carry about, for the user, cellular telephones or mobile phones, 5 there are actually different types of cases which the user can wear for example at the belt or over one shoulder. No one of the devices actually known allows the possibility of quickly and easily setting the cellular telephone to its use condition and then as well quickly and easily setting it back to rest, and no one of the known devices allows to carry the cellular telephone in such a position to allow the user to hear a call, particularly in presence of great noise. The invention intends to solve these and other 10 problems through the following solution idea. The small size cellular telephone is fixed on a telescopic slide sliding on a guide longitudinally to be secured at the wrist of the arm of the user. In this position, when the cellular telephone receives a call and has the vibration signaller warning system activated, the vibrations are easily transmitted 15 to the slides and guide system and from this latter to the wrist of the user who can this way instantaneously notice the call state, even in a noisy place. By catching the cellular telephone with the free hand, the user can extend the guides and quickly bring the cellular telephone to the palm of the hand to use it. When the conversation 20 is over, the cellular telephone can be as well quickly taken back to the backward rest position on the wrist. Suitable means are provided to keep the slides in the backward rest position and if required also in the extended use position of the cellular telephone. Further features of the invention and the advantages deriving therefrom, will 25 better appear from the following description of a preferred embodiment of same, illustrated, by way of non-limiting example, in the figures of the attached sheets of drawings, in which:

- Figures 1 and 2 show the device in question, longitudinally sectioned, fixed to the user's wrist, and shown respectively in the cellular telephone rest position and use position;

30 - Figure 3 shows further details of the device taken along the transversal section line III-III of Figure 1;

- Figure 4 shows, enlarged and longitudinally sectioned, the assembly of the guide and telescopic slides, shown in the backward rest position as in Figure 1;

- Figure 5 shows in plan view the rear end of the upper slide of the device as from the details of Figure 4.

5 From Figures 1, 2 and 3 it can be appreciated that the device includes a rectilinear guide 1, flat shaped and provided at one end on its lower part with any means adapted to be secured longitudinally on the arm B of the user, at the wrist P. For this purpose the guide 1 can be provided on its lower part with a loop 2 passed through by a strap 3 encircling the user's wrist P. The strap 3 can be the same one which, in
10 opposition with the guide 1, retains the wrist watch W. It is understood that differently from what shown, the guide 1 can have on its lower part an anatomic shape and/or can be suitably padded to be worn at the wrist without any problem. Viewed transversally as from Figure 3, the guide 1 has for example a dovetail shape and has a
15 slide 101 sliding longitudinally which in its turn has a transversal dovetail shape and serves as guide for a further flat slide 201 on which there is fixed with longitudinal
setting the cellular telephone T, for example by means of small clips 4, 4' engaging
grooved zones at the ends of the cellular telephone itself. The cellular telephone has
the aerial A turned towards the user's hand. From Figure 1 it can be noticed that
when the device is in rest position, the slides 101, 201 are superimposed one onto
20 the other and with respect to the guide 1 and the cellular telephone is in a backward
position allowing the user the free use of the hand M. When the cellular telephone
calls and has the vibration signaller activated, the vibrations are transmitted to the
assembly 1, 101, 201 and from this to the wrist P, so that the user can notice the call
state even if he is in a noisy place. From Figure 2 instead, it becomes clear how by
25 taking the cellular telephone T out with the free hand and making the slide assembly
201, 101 slide on the guide 1, the same cellular telephone T comes to be arranged in
the palm of the hand M, into a position suitable to use it quickly and easily. With a
movement as well quick and easy the cellular telephone can be brought to the rest
position of Figure 1. With reference to figures 4 and 5 is now evidenced in detail one
30 possible embodiment of the assembly 1, 101, 201. From said figures it can be no-

ticed that the slide 201 is provided on the rear end ~~not~~ engaged by the cellular telephone, with a flexible tongue 5 which has a tooth 105 turned downwards and when the same slide 201 is in the backward rest position, said tooth 105 snaps in a small recess 6 provided on the rear end of the slide 101, at the end of a longitudinal groove 7 of the same slide 101. Pulling longitudinally the slide 201, the tooth 105 co-operates with the flared inner edge 106 of the recess 6 and easily gets out of said recess, while the tongue 5 bends. The tooth 105 then slips on the bottom of the groove 7 and finally snaps into a recess 8 identical and opposed to the recess 6 mentioned above. Keeping the longitudinal pull on the slide 201, its tooth 105 which has reached the end of the groove 7, drags the slide 101 below making it slide on the guide 1. Also the slide 101 is provided in the rear part with a flexible tongue 9, analogous to the tongue 5, whose tooth 109 gets out of a recess 10, analogous to the recess 6 and slides in a longitudinal groove 11, analogous to the groove 7, at whose end it is provided a recess 12, analogous to the recess 8, where said tooth 109 snaps. It is then clear how the slide assembly 101, 201 steadily remains in the backward rest position thanks to the co-operation of the teeth 105 and 109 with the recesses 6 and 10 and how, on the contrary, it steadily remains in the extended position thanks to the co-operation of the same teeth 105 and 109 with the recesses 8 and 12. Reference numerals 108, 110, 112 indicate the flared inner edges of the recesses 8, 10, 12, analogous to the edge 106 of the recess 6.

CLAIMS

1. A device for the quick and easy use of a small size cellular telephone (T), characterised in that it includes a rectilinear guide (1) fixed by any suitable means and with longitudinal setting on the initial portion of the user's arm (B), at the wrist 5 (P), on said guide there being assembled at least one longitudinally sliding slide (201) on which the cellular telephone (T) is longitudinally placed, turned with the aerial (A) towards the user's hand, means being provided to keep the slide with the cellular telephone in rear position on said guide and to allow the extension of the same slide, so that the part of it carrying the cellular telephone can reach the palm of 10 the hand of the user, to allow the use of the cellular telephone.

2. A device according to claim 1, in which on the guide (1) there is mounted an assembly of telescopic slides (10, 201) on the last of which the cellular telephone (T) is assembled, the whole so to contain the dimension in length of the guide and slide assembly, although maintaining a remarkable extendibility of the slides themselves, means being provided to keep in the rear position said telescopic slide assembly. 15

3. A device according to the preceding claims, in which the cellular telephone (T) is fixed on the slide (201) by means of small clips (4, 4').

4. A device according to the preceding claims, in which the assembly of the 20 guide (1) and of the telescopic slides (101, 201) is characterised by a slidable coupling of the dovetail type.

5. A device according to the preceding claims, characterised in that the slides (201, 101) are provided, in connection with their rear end, with longitudinal and flexible tongues (5, 9), with lower teeth (105, 109) which slide with friction in longitudinal 25 grooves (7, 11) of the same slides, which with their ends lock the teeth and their slides in the end positions of the strokes of extension and retraction.

6. A device according to claim 5, in which at the end of the bottom of the longitudinal grooves (7, 11) of the slides (101, 201), there are provided recesses (6, 8 and 10, 12) within which snap the lower teeth (105, 109) of said flexible tongues (5, 30 9), to keep the same slides in the retracted rest position and the extended use posi-

tion of the cellular telephone.

7. A device according to claim 6, in which the teeth (105, 109) of the flexible tongues (5, 9) and/or the inner edges (106, 108, 110, 112) of the recesses (6, 8, 10, 12) within which snap the said teeth at the end of strokes of extension and of retraction of the slides (101, 201), are flared to help the disengagement of the same teeth from said recesses.
8. A device according to the preceding claims characterised in that it can be fixed onto the user's wrist (P) through a strap (3) wrapping the wrist itself.
9. A device according to claim 7, in which the strap (3) fixing the device itself onto the user's wrist carries also a watch (W).

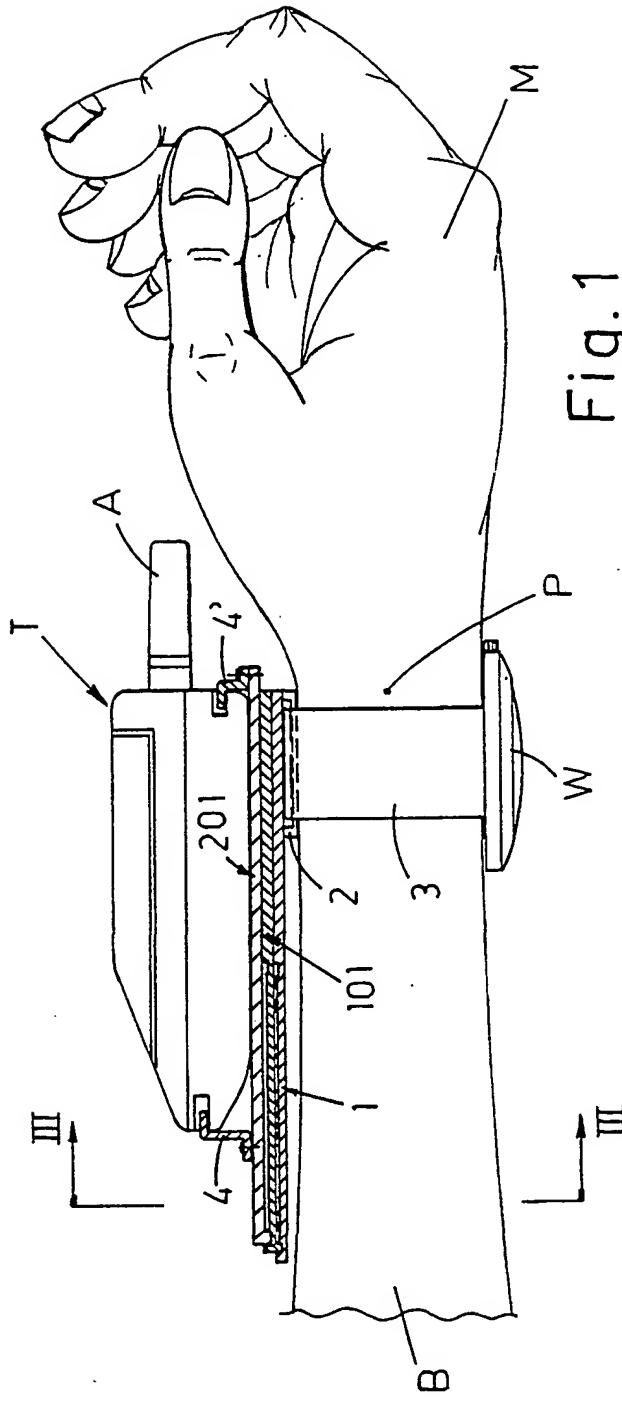


Fig. 1

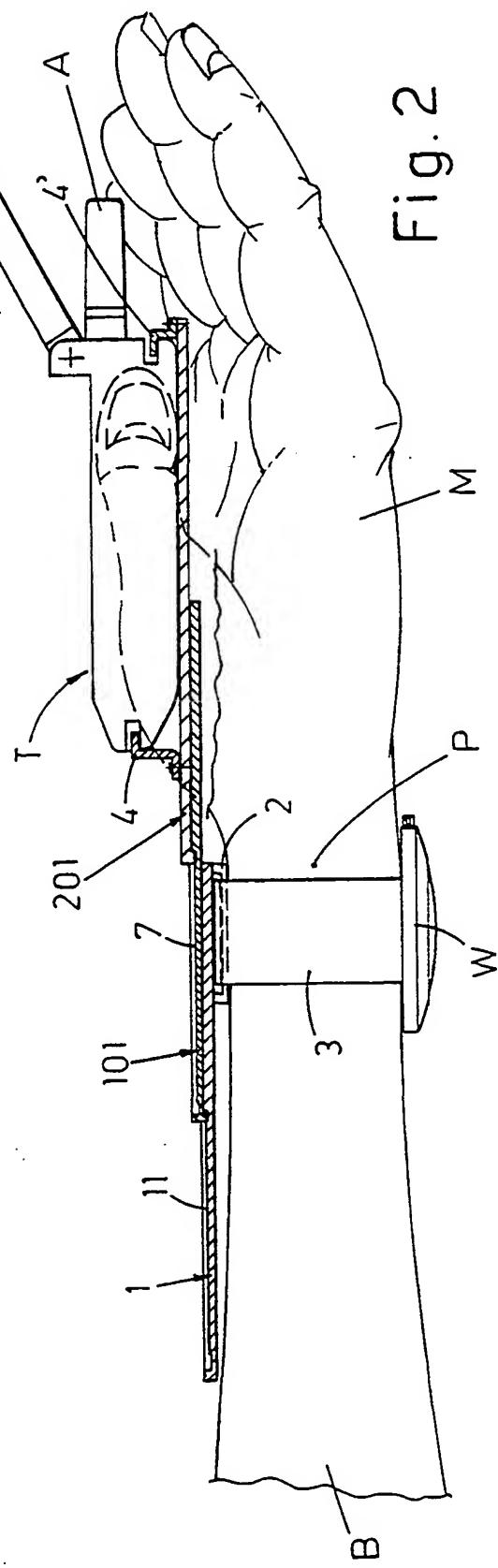


Fig. 2

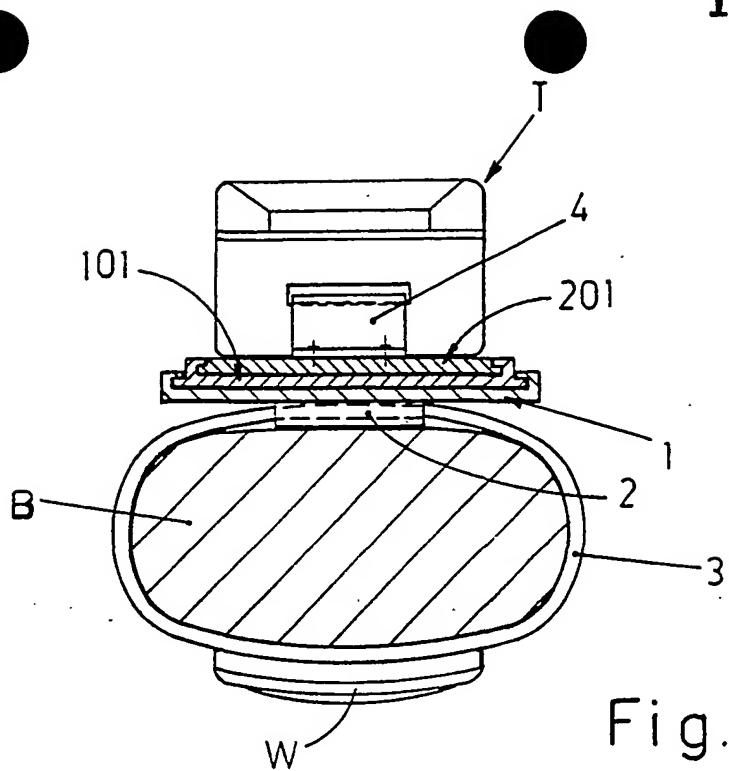


Fig. 3

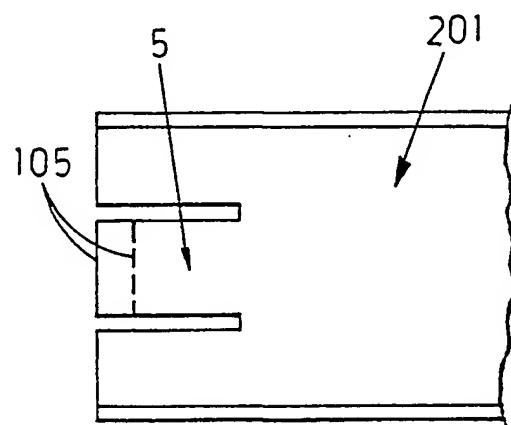


Fig. 5

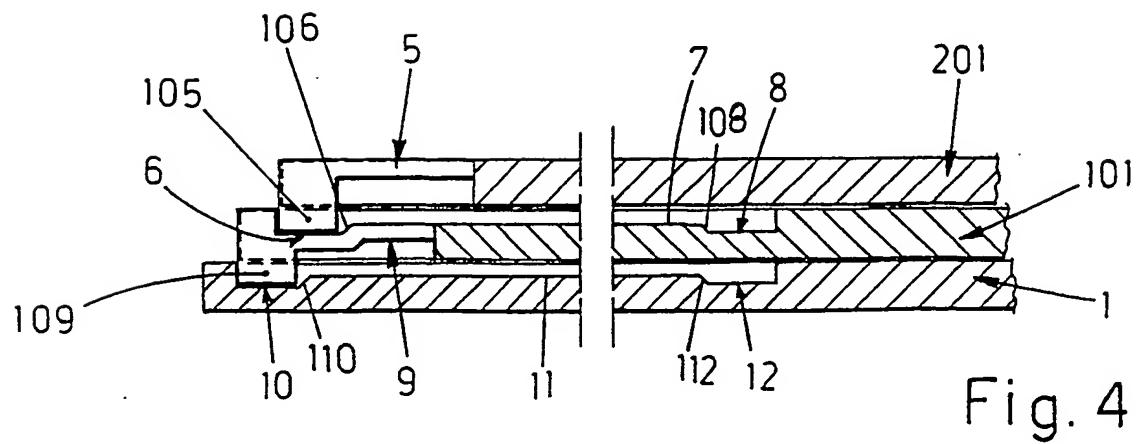


Fig. 4

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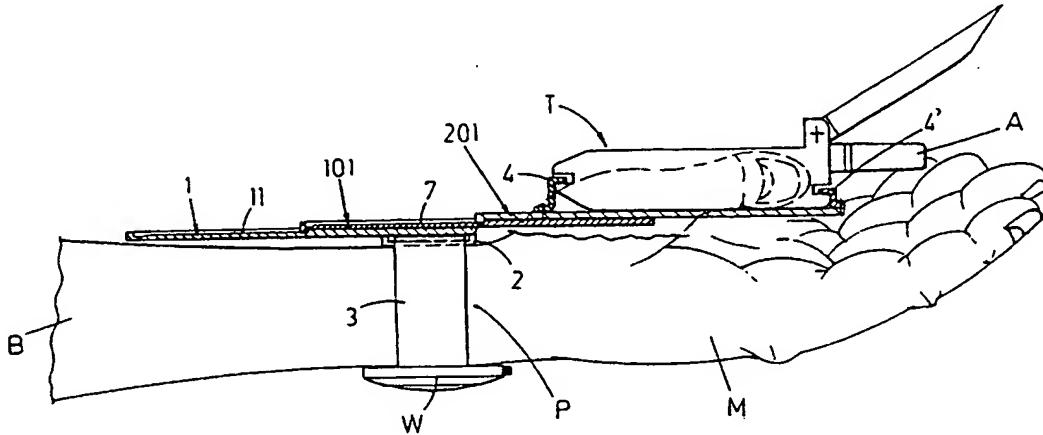
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(72) Inventor; and

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(75) Inventor/Applicant (for US only): CALDANA, Marcus [SE/IT]; Via dei Giardini 5, I-40129 Bologna (IT).

(54) Title: DEVICE FOR THE QUICK AND EASY USE OF A SMALL SIZE CELLULAR TELEPHONE



WO 01/61970 A3

(57) Abstract: The small size cellular telephone (T) is fixed on a telescopic slide (201, 101) sliding on a guide (1) which can be longitudinally secured on the user's arm (B) at the wrist (P). When the cellular telephone calls and has the vibration signaller activated, the vibrations are easily transmitted to the slides and guide system and from this last to the user's wrist who can this way instantaneously notice the call state, even if he is in a noisy place. By catching the cellular telephone with the free hand, the user can extend the guides and quickly bring the cellular telephone itself to the palm of the hand to use it. When the conversation is over, the cellular telephone can be as well quickly taken back to the backward rest position on the wrist. Suitable release means are provided to keep the slides in the backward rest position and if required also in the extended use position of the cellular telephone.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04B1/38 H04M1/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04B H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 467 324 A (HOULIHAN JOHN T) 14 November 1995 (1995-11-14) column 1, line 54 -column 2, line 14; figures 4,9,12 ---	1-9
A	WO 99 59314 A (KAMBE KAORUKO ;KAMBE TAKAO (JP); KAMBE KIMIHIKO (JP)) 18 November 1999 (1999-11-18) abstract; figures 3-8 ---	1-9
A	EP 0 871 236 A (NOKIA MOBILE PHONES LTD) 14 October 1998 (1998-10-14) abstract; figures 8,12 -----	1-9



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Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5467324	A	14-11-1995	NONE		
WO 9959314	A	18-11-1999	AU	1688999 A	29-11-1999
EP 0871236	A	14-10-1998	FI	971522 A	12-10-1998
			US	6005525 A	21-12-1999

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